Correcting DEFICIENCIES

Improved training is needed for flight crews and maintenance personnel in the CIS in the aftermath of accidents involving human factors issues.

BY VLADIMIR KOFMAN

Despite years of accident-free operations for many leading airlines in the Commonwealth of Independent States (CIS) and generally positive assessments in recent safety audits,[1] immediate action is required to correct deficiencies involving the quality of training for flight crews and maintenance personnel.

In 2008, the 12 CIS countries — all party to the Agreement on Civil Aviation and Airspace Use, whose executive body is the Interstate Aviation Committee (MAK) — experienced 40 civil aircraft accidents, including 21 fatal accidents with 231 fatalities, in all types of air work. Of these, eight were transport aircraft accidents, including three fatal accidents that killed 161 people.

Worldwide, during 2008, 55 transport aircraft accidents occurred, including 22 fatal accidents that killed 514 people (p. 47).[2] The three fatal transport aircraft accidents in the CIS accounted for nearly 14 percent of the worldwide total; the 161 fatalities represented 31 percent of the total.

The causes of these accidents can be traced to repeated combinations of human factors issues involving flight and ground personnel and stemming from organizational problems at a number of airlines. This is an indication of serious system-based deficiencies in flight personnel training.

This situation damages civil aviation's reputation in the CIS and may result in the inclusion of some air carriers on the European

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Union's blacklist of unsafe airlines. As a result, complex measures are required to increase state support and stabilization of airline activities.

The primary problems in aviation safety in the CIS are the following:

- About half of air carriage is performed in aircraft manufactured in the Soviet Union from 1960 through 1970. Manufacturers' oversight is inadequate for continuing airworthiness and customer service for these aircraft.
- There is a shortage of spare parts, and delivery of available parts often is delayed.
- Because of the parts shortage and the accompanying delays, a "deferred defects system" has taken hold in which aircraft defects are not effectively monitored and an aircraft's flight capability period may be unreasonably prolonged. Some airlines have developed their own minimum equipment lists (MELs), even for domestically manufactured aircraft, and have not coordinated the MELs with aircraft design bureaus.
- The aircraft incident investigation process does not take into account the International Civil Aviation Organization's (ICAO's) standards, and incidents are not investigated with the same techniques used to investigate accidents.
- The system of aviation personnel training does not conform to present requirements. Flight crew training programs, including training under special flight conditions, have not been reviewed for the past 10 years. Implementation of conversion training programs in the airlines is not always adequately controlled.
- In 2008, during the course of aircraft accident investigations, deficiencies were found in the staffing of flight crews and their interaction with cabin crews.
- Because of the increasing use of Western-manufactured aircraft, the number of accidents involving these aircraft also is increasing. This is not only because of the increase in their operations but also because of the ineffectiveness of measures to prevent failures and defects in foreign-manufactured aircraft and their parts. In addition, there is no time to train the flight crews and ground personnel who operate these aircraft. Language proficiency also is a factor. Aircraft accident investigations have found that even in normal operating conditions, mistakes have been made because of the difficulty of maintaining an adequate vocabulary in a foreign language.[3] One solution might be to expand the existing electronic library of information on domestic aircraft to include Western-built aircraft.
- Some aviation-related laws have not been fully developed and adopted. Other documents are obsolete and have not been harmonized with international standards.
- Since 1992, the number of airports in the CIS has been significantly reduced. Some airports do not have paved runways, air navigation facilities or airport lighting equipment to meet ICAO standards. This affects not only the scheduling of flights but also directly threatens flight safety.
- In a number of regions, air navigation facilities do not meet the requirements of modern aircraft and do not provide accurate en route information.
- Since the 1990s, aviation meteorological services have deteriorated.

The CIS has supported ICAO efforts to develop regional and sub-regional interactions to improve aviation safety. These efforts require not only special knowledge in certain areas of aviation activity but also considerable financing, unification of resources and the experience of specialists.

CIS member states have consistently pursued a policy of deepening international cooperation in flight safety throughout MAK's 18-year history. MAK operates one of only seven scientific-technical centers in the world that have been identified by ICAO as capable of conducting the necessary work related to aircraft accident investigations and has conducted more than 400 investigations, including international cases, in 53 countries of the world.

With the U.S. National Transportation Safety Board (NTSB), MAK conducted 35 aircraft accident investigations that resulted in recommendations to improve the production technology of aircraft design composite elements, to develop new designs of aircraft control systems and to enhance standards of airworthiness.

Other joint aircraft accident investigations with France included unique activities in the Black Sea to retrieve the "black boxes" from the Armavia Airbus A320 that struck the water on May 3, 2006, after a rejected approach

to the airport in Sochi, Russia. All 113 people in the airplane were killed, and the airplane was destroyed.[4]

Cooperation and interaction have become standard. MAK forwards timely operational information on aircraft accident developments to aviation authorities in other states in the region on a confidential basis so that urgent preventive measures can be implemented.

To enhance flight safety, the following are necessary:

- Solve human factors problems — the main contributors to aircraft accidents and incidents in flight operations, air traffic management, air traffic control and other areas;
- Improve preparation for and performance of charter flights so that they equal the preparation and performance required for scheduled flights;
- Emphasize safety during flights in mountainous areas, and reduce instances of controlled flight into terrain;
- Maintain the continuing airworthiness of an aging aircraft fleet operated in different regions of the world; and,
- Increase the level of language proficiency for ground handling and flight operations personnel who service and operate Western-built aircraft.

Since 2001, under the framework of an ICAO–MAK project, practical assistance has been given to state aviation authorities in implementing the rules based on ICAO standards and recommended practices; training of inspectors and specialists of flight and engineering services (more than 3,500 specialists have been trained); holding conferences; and distributing flight and technical materials.

In particular, in early June, a Global Aviation Safety Roadmap Summit was held in Moscow to consider common issues of flight safety, to develop an action plan concerning urgent problems and to inform participants of the results of the meeting.

Among the topics discussed were the inconsistent use of safety management systems and the shortage of qualified personnel. The summit focused on informing participants about the Global Aviation Safety Roadmap and their role in the initiative and was an important new step in allowing governments and industry to identify and address the regional safety issues.

Vladimir Kofman, Ph.D., the former chairman of MAK's Aircraft Accident Investigation Commission, is the principal expert for air accident investigation.

Notes

1. The countries included in recent audits, in addition to Russia, are Armenia, Azerbaijan, Tajikistan, Ukraine and Uzbekistan. These six countries, along with six others — Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova and Turkmenistan — make up the CIS and are members of the Agreement on Civil Aviation and Airspace Use.
2. International Air Transport Association data show that the 55 fatal transport aircraft accidents in 2008 included 23 fatal accidents that killed 502 people.
3. ICAO has established a 2011 deadline for international compliance with English language proficiency requirements for pilots and air traffic controllers.
4. Aviation Safety Network. *Accident Description*. <aviation-safety.net/database/record.php?id=20060503-0>.

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